416-500

EXAMINER

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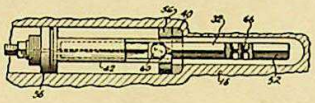
Abstract

683,474. **PROPELLER BLADE VIBRATION SUPPRESSOR.** Erle Martin, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware. Filed July 13, 1946. Published June 24, 1952. Class 170. 2 sheets of drawings. 7 pages of specification.



To damp vibrations in a propeller blade, a hollow cage member **36**, having oppositely disposed side portions **42** and an end flange **40**, is forced into the hollow shank of the blade so as to abut a shoulder therein and locked against rotation about its axis. A member **48** having arcuate shoulders **54** is disposed within the cage member. A washer **56** having spaced oppositely disposed arcuate shoulders **58** abuts flange **40**. Rollers **60** and **62** are arranged between respective pairs of shoulders **54** and **58** and when the propeller is subject to vibrations, the vibratory movements substantially perpendicular to the longitudinal axis of the blade are transmitted through rollers **60** and **62** to member **48** imparting a lateral movement thereto. As the rollers roll on the arcuate shoulders, the member **48** is forced inwardly against the action of centrifugal force absorbing energy which is returned to the propeller blade when member **48** moves back to its center position. The member **48** and the geometry of the rollers and arcuate surfaces are selected so that vibration induced movements of member **48** will be out of phase with a particular vibration frequency of the blade which it is desired to suppress. A device constructed as described is known as a tuned dynamic vibration damper or absorber.